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[0012] Fig. 2 is a diagram for describing the configuration of a basic function receiver used in BS digital broadcasting. A tuner 102 and a demodulator 103 do tuning, to select one TS stream. A descrambler 104 descrambles a broadcasting signal. A TS decoder 105 selects a desired packet, to select a particular program on a particular channel. A main line video/audio signal is converted into a signal accepted by a TV monitor 20 in an MPEG decoder 113.

[0013] A working memory 106 is a storage area in which data broadcast data on the selected channel is cached (temporarily stored). When the channel is changed or a message saying that the contents of a data carousel have been changed is received from a broadcasting station, a new data carousel is captured and held herein.

[0014] An input/output port 110 accepts a signal of a remote control operated by a viewer. Reference numeral 109 denotes a modem interface. In a nonvolatile memory 108, an area usable for each broadcaster is determined. Data recorded on the nonvolatile memory 108 is held as it is even if the power to the receiver 10 is turned off. A volatile memory 115 is a temporary storage area where data can be stored only while the same channel is being tuned in to. When the channel switches to another channel, the data on the volatile memory 115 is erased. An IC card interface 111 reads and writes data in an IC card 112 having

identification information, personal information, and so on of a viewer recorded thereon. A central processing unit (hereinafter referred to as CPU) 107 receives instructions such as an instruction to operate the remote control from the input/output port 110 to control the receiver 10 while reading out and interpreting a BML file cached in the working memory 106 when a data broadcast is selected to constitute data broadcast screen data and writing the data into a video memory in a graphic controller 114. Thus, a data broadcast screen is displayed on the TV monitor 20.

[0015] BML is a description language customized for data broadcasting applications based on XML (eXtensible Markup Language). The BML enables a procedure description language called ECMAScript to describe a procedure such that a dynamic operation is made expressible on the data broadcast screen. The ECMAScript is an object-oriented script language based on JavaScript. Furthermore, DOM Level1 I/F is for dynamically operating each object within a document. DOM (Document Object Model) is a model having a document structure defined to dynamically operate the contents and structures of an HTML document and an XML document. The foregoing is a preparation to describe an embodiment of the present invention.

[0016] A function expanding method for the receiver according to the present invention is realized by operating as received information recording/referencing means upon interpretation of data broadcast program data including a script by the CPU 107 in the receiver 10. Fig. 3 is a diagram for describing received information recording

processing serving as an operation of the received information recording/referencing means. Fig. 4 is similarly a flow chart for describing received information referencing/deleting processing serving as an operation of the received information recording/referencing means. Figs. 3 and 4 will be described below.

[0017] (Recording of received information) The viewer receives a program broadcast operating as the received information recording/referencing means. The script included in the program data is interpreted by the built-in CPU 10 in the receiver 10 that has received the script, and data that has been required of a data center 50 by the viewer is received according to an interactive operation of the viewer and is displayed on the TV monitor 20. The received information recording/referencing means displays on the TV monitor 20 an interactive interface for making the viewer to choose whether or not received information is to be recorded on the nonvolatile memory 108 (S10). When the received information is recorded, the viewer operates the remote control 40, to enter a password (S13). The nonvolatile memory 108 is checked to determine whether or not the entered password is overlapped with passwords of other viewers already registered. When they are not overlapped with each other, viewer identification information for identifying the viewer and the password are recorded on the nonvolatile memory 108 in a shape as shown in Fig. 6. Data in which entering person identification information for identifying an entering person is assigned to the received information to be recorded is recorded at a

predetermined address of the nonvolatile memory 108 (S16). Examples of the received information to be recorded on the nonvolatile memory 108 include information such as an electronic order memo, a bill, a specification, and an inquiry for a balance of a bank account. Fig. 5 illustrates an example of display of electronic receiving data on the TV monitor 20.

[0018] (Reference to information) The receiver that has received program data including a portion where the received information recording/referencing means is described as a script causes the CPU 107 in the receiver to interpret the program data to broadcast a program represented by the program data (S20). When the viewer selects reference to the information within the nonvolatile memory 108 by operating the remote control 40, the program including the received information recording/referencing means urges the viewer to enter personal authentication information. The viewer enters the password by operating the remote control 40 (S22). When a password whose character string is the same as that of the entered password exists in the nonvolatile memory 108, entering person identification information corresponding to the password is read, and received data recorded together with the same entering person identification information is displayed on the TV monitor 20 (S26).

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[Fig. 2] Fig. 2 is a block diagram for describing the

configuration of the BS digital broadcasting receiver.

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